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COMMENTS ON THE DAYLIGHT SAVING
PROBLEM.

BY W. W. CAMPBELL.

[The following comments on the subject of "daylight saving" were prepared by request of the Chamber of Commerce of one of the great cities of the United States. Answers to five questions were asked for. The questions are not here printed, but their substance may be inferred from the comments.]

FOREWORD.

The time system which prevailed in the United States prior to 1884 was a hodge-podge that could not be endured by a progressive people. The Standard Time system now in use brought order out of confusion, except in a few far-western intermountain localities where the railroads have carried the system to excess for their own convenience. There are today certain proposals for "saving daylight" which threaten a return of confusion in the time system.

The problem of daylight saving is a much more difficult one for our very large country, extending over 59° of longitude, than it is for the small European countries, France, Germany, Switzerland, Italy, Denmark, Norway, Sweden, Great Britain, only one of which extends (very slightly) over more than 15° (one hour) of longitude. The European experience of the past summer was not under normal conditions, and was therefore not a fair test. It was under war conditions, when people will do anything that their governments request. It is not surprising that northeastern Germany, which was working thirty minutes or more behind Sun time, should want the working day advanced. Western Germany, including Hamburg, Bremen, Frankfort and the Rhine provinces, which formerly worked twenty to thirty minutes ahead of the Sun, are now working from one hour and twenty minutes to one hour and thirty minutes ahead of the Sun. It does not follow that the Rhine provinces will consent to this extreme advance of the working day in years of peace.

Great Britain (not including Ireland) ran with clocks advanced one hour during the months of the past summer, but the clocks were changed back to the old system on

October 1. There was considerable dissatisfaction with the new system, even for the summer months, and a commission of inquiry has been appointed to determine whether the advantages exceeded the disadvantages, with reference to deciding what time system the Kingdom should use next summer.

The experience of the city of Cleveland is not a test of the question. For a long time Cleveland was running on the 90th meridian time; that is, thirty-three minutes slow of the Sun. The marvel is that Cleveland endured the situation so long. It is no surprise and no test of the main question that Cleveland should belatedly prefer running twenty-seven minutes fast, winter and summer, to running thirty-three minutes slow, winter and summer. The case of Detroit is analogous. After working for many years with clocks twenty-eight minutes slower than the Sun, it is no surprise that their experience of the last year should lead them to prefer clocks thirty-two minutes fast over clocks twenty-eight minutes slow.

QUESTION I.

I favor the daylight saving plan if not carried to extremes, and if accomplished without introducing confusion in the time system of the community, nation and world.

QUESTION II.

I favor it chiefly in order that the day's work may be completed in time to give daylight out-of-door recreation to workers and workers' families. The middle of the work day in nearly the whole of our country, and in essentially all other countries under normal conditions, falls later than the middle of the Sun day, which is unfortunate. The ten-hour labor day, 7:00 A. M. to 6:00 P. M., and the eight-hour labor day, 8:00 A. M. to 5:00 P. M., have their mid-point one-half hour after the Sun is on the meridian. The office day, 9:00 A. M. to 5:00 P. M., has its mid-point at 1:00 P. M. The modern store day, 9:00 A. M. to 6:00 P. M., has its mid-point at 1:30 P. M. The practical result of these hours is that workmen, store clerks, etc., are freed from their duties so

late in the day that after reaching their homes and eating their dinners the daylight hours are gone, except in the early summer months. Healthful and economic recreation is in essence denied them, and for diversion too large a proportion have no other recourse than the cheap shows with poor programs and poorer atmosphere. Many workers are not tempted to healthful recreation because the night hours are on.

The saving of eyesight and the saving of illumination bills are important, but in a minor degree.

The advancing of the work day by too great an amount would be objectionable. Those who prepare the breakfasts would have to get up too early. In the cities, where there are many hot nights in the summer months, it would send the families to bed too early in hot and stuffy bedrooms where restful sleep is not possible, and it would rout the families out too early in the cool of the morning when they could sleep restfully. It should be remembered that the Sun always has been the ruler of the day and I think it always will be. The law-making powers should not try to force the people too far out of step with the Sun: that would probably lead to successful resistance.

QUESTION III.

I do not think that daylight saving on a nation-wide basis, by such simple act of Congress as that of setting the clocks one hour ahead, is practicable. Our country is too big. The present Standard Time system is fine, the people are accustomed to it and like it. It could doubtless be improved in certain regions; for example, in eastern Ohio, western Pennsylvania, eastern Florida, southern Arizona, etc., where the clocks are thirty or forty minutes slow of the Sun. There are many other great regions, such as the central parts of the Dakotas, Nebraska, Kansas, Oklahoma, Texas, etc., where the clocks are running from thirty to forty minutes in advance of the Sun. If the work day were set forward one hour by national action, many regions would be operating more than an hour and a half in advance of the Sun, which is too much. I think that no community should be asked to work more than one hour in advance of the Sun, under normal conditions, even in the long summer months.

QUESTION IV.

I should be glad to have the work day in advance of the Sun during the summer months, beginning with 2:00 A. M., May 1, and ending at 2:00 A. M., October 1; and to have the work day in the winter months not appreciably behind the Sun day, but as nearly coincident with the Sun day as is practicable.

There is no point in delaying the summer advance until June 1. Thruout the United States the Sun rises less than two minutes later (by the clocks) on June 1 than it does on June 22. It rises earlier (by the clocks) on June 1 than it does on July 1. The daylight is as long on April 1 as on September 12. It is as long on May 1 as on August 12.

The public would not like to begin the summer advance when the weather is still cold. April 1 is too early for the the change. If the first morning of the new system should be cold and stormy, the change under the unfavorable conditions would create prejudice on the part of those who do not think twenty-four hours ahead.

May 1 is a better time to start, as the weather will in general be warm, and the people will then be longing for out-of-door life.

October 1 is a favorable time to change back to the winter system, because the latter half of September in the United States is generally fine out-of-door weather; and there is the further fact that the Sun rises ten minutes earlier and sets ten minutes earlier than the clocks indicate, owing to what astronomers call the equation of time. The people will not want to change their habits while the good weather lasts. Up to October 1 nearly everybody would have the extra daylight for recreation.

QUESTION V.

It is not certain that a satisfactory basis of change has yet been proposed. In my opinion the Standard Time system should remain essentially as it is, and daylight saving should be accomplished by other means than that of changing clocks forward in the spring and backward in the fall. The clock system should be settled correctly once for all, and be left unchanged. There is, of course, the psychological point that

the people are accustomed to stopping for the noon hour when the clocks indicate twelve, and many will be inclined to say that a change in that custom will be difficult to establish. A change in the clock reading of the noon hour might cause slight confusion, but it would not last more than a day or two. I would suggest as a basis for daylight saving that the legislature of each state decide what the noon hour for state and county officials, public schools and other state institutions shall be, and what the hours for banks and courts shall be. For example: in Ohio, that the noon hour in winter, October 1 to May 1, shall be 11:30 to 12:30 Central Standard time, and in the summer 11:00 to 12:00 Central Standard time. Correspondingly, I would suggest that the six New England states decide for the same noon hours as above, but in Eastern Standard time. Congress could fix the hours for the District of Columbia, and decree that the hours for United States courts and United States officials and employees within the various states should conform to the local legal hours. An established noon hour for school children and government officials, and established banking hours, would be very strong incentives for all manufacturing concerns, stores, etc., to have the same noon hour, and to make the corresponding advance in the times of beginning and ending the day's work. If there should be individuals and institutions which decline to advance their work day, the same individuals and institutions would probably decline to advance their work day if the device of setting all clocks forward a half hour or an hour were ordered by the Government.

I admit that uncertainty exists as to how far the psychological element of dependence upon the actual reading of a clock face will control the decisions of individuals and organizations.

To the act of falsifying the time by setting the clocks thirty minutes or sixty minutes fast there is very little *technical* objection. Records of events which ought to be made in absolute time, so that the instant of happening could be located precisely at any future date, could still be made in one of the existing definite systems. Interest in the precise time when an ordinary event of daily life occurs vanishes

very quickly. Outside of the domain of pure science we almost never go back a month or a year to inquire as to the precise second or minute or hour when something happened. The morning or the evening, the forenoon or the afternoon, the day or night, are usually sufficient. The lack of a logical time system before the year 1884 does not embarrass us today. However, the changing of clocks by cities, localities or states would produce a certain amount of confusion which we ought to avoid if possible. I think we should not throw the clocks out of step with those of surrounding localities, those of other states, and those of other nations. The changing of all the clocks in the United States by national decree would produce a certain amount of confusion. For example: if the Canadian Government did not institute the same practice there would be confusion along the boundary line.

I think that city authorities should be slow to act. A suitable commission ought to consider the problem for a large group of states, such as the New England states, or for the nation. The falsifying of clocks should be avoided if possible.

QUESTION VI.

None of the methods thus far proposed would affect the daily life of the Lick Observatory, but we should not like to have our clock faces read Denver time, as they would if the state or nation ordered all clocks to be set forward one hour.